

Proposal for Supplement 13 to the 04 series of amendments to Regulation No. 44 (Child Restraint Systems)

The text reproduced below was prepared by the expert from the Netherlands, aimed at excluding diverging interpretations with regard to child restraint systems in UN Regulation No. 44 and supersedes ECE/TRANS/WP.29/GRSP/2016/18. The modifications to the current text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

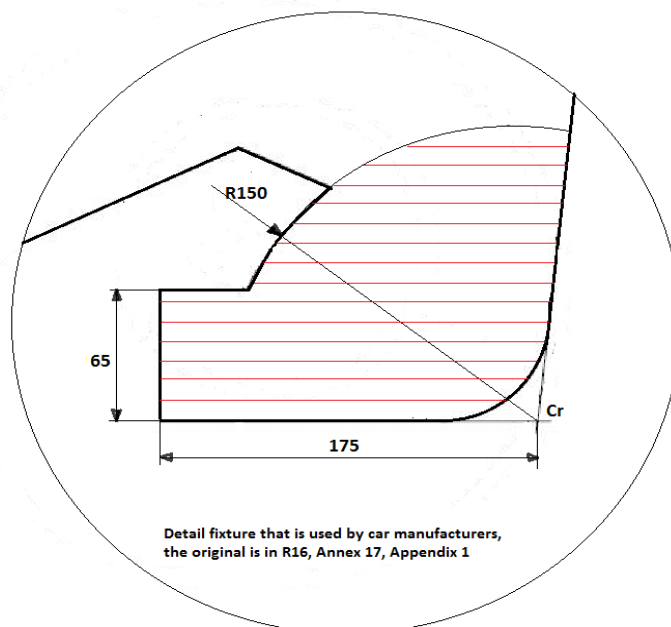
I. Proposal

Paragraph 6.1.8., amend to read:

"6.1.8. Child restraint systems of the "universal" category, except ISOFIX universal child restraint systems, shall have a main load-bearing contact point, between the child restraint and the adult safety-belt. This point shall not be less than 150mm from the Cr axis when measured with the child restraint on the dynamic test bench installed in accordance with Annex 21 to this Regulation without a dummy. ~~This shall apply to all adjustment configurations. Additional alternative belt routes are allowed.~~

Moreover, in the zone with red horizontal lines, there may be contact by means of flat support of the adult safety belt, however, no part of the child restraint shall hinder the lap belt of the adult from following its intended design and use.

The main load-bearing contact point is the part of the child restraint that makes that the lap belt will sustain tension forces in the longitudinal direction and transverse forces from the restraining function.



Where an alternative belt route exists, the manufacturer shall make specific reference to the alternative route in the user instructions, as required in paragraph 15. When tested, using such alternative belt route(s), the restraint shall comply with all the requirements of the Regulation. ~~with the exception of this paragraph.~~"

Paragraph 6.2.2., amend to read:

- "6.2.2. For groups I, II and III, all restraint devices utilizing a "lap strap" shall positively guide the "lap strap" to ensure that the loads transmitted by the "lap strap" are transmitted through the pelvis. The assembly shall not subject weak parts of the child's body (abdomen, crotch, etc.) to excessive stresses. **The positive guidance of loads over the pelvis shall be realized from the moment that the child is installed; forward movement of the child as a result of the dynamic test shall immediately generate tension in the adult lap strap.** The assembly shall not subject weak parts of the child's body (abdomen, crotch, etc.) to excessive stresses."

Paragraph 6.2.12., amend to read:

- "6.2.12. In case of booster cushions, the ease with which the straps and tongue of an adult belt pass through the fixture points shall be examined. This goes particularly for booster cushions which are designed for the front seats of cars, which may have long semi-rigid stalks. The fixed buckle should not be allowed to pass through the fixture points of booster seats, or to permit a lie of belt completely different from that of the test-trolley. **This shall be tested during a separate fitting session on the test bench having replaced as well the central part of the standard safety belt (figure 3 of Annex 13) as part A2 with its X mm of flexible strap length, by respectively a tongue and a generic buckle on a stalk, both together projecting 150 mm outside the Cr point.**"

Paragraph 7.2.1.1., amend to read:

- "7.2.1.1. The buckle shall be so designed as to preclude any possibility of incorrect manipulation. This means, inter/alia, that it shall not be possible for the buckle to be left in a partially closed position; it shall not be possible to exchange the buckle parts inadvertently when the buckle is being locked; the buckle shall only lock when all parts are engaged. Wherever the buckle **and /or the tongue are** ~~is~~ in contact with the child, it shall not be narrower than the minimum width of strap as specified in paragraph 7.2.4.1.1 below. This paragraph is not applicable to belt assemblies already approved according to ~~ECE~~ Regulation No. 16 or any equivalent standard in force. In the case of a "Special Needs Restraint" only the buckle on the primary means of restraint need comply with the requirements of this paragraph 7.2.1.1. to paragraph 7.2.1.9. inclusive."

Annex 13, Figure 1, amend to read:

Figure 1A
Standard seat belt configurations, for dynamic test

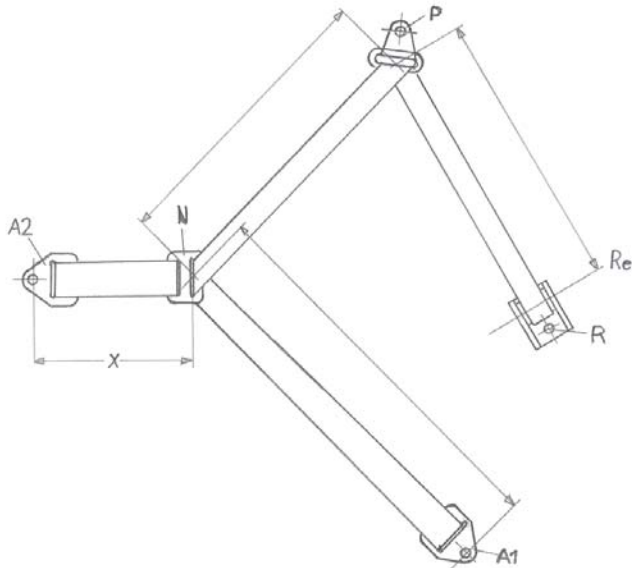
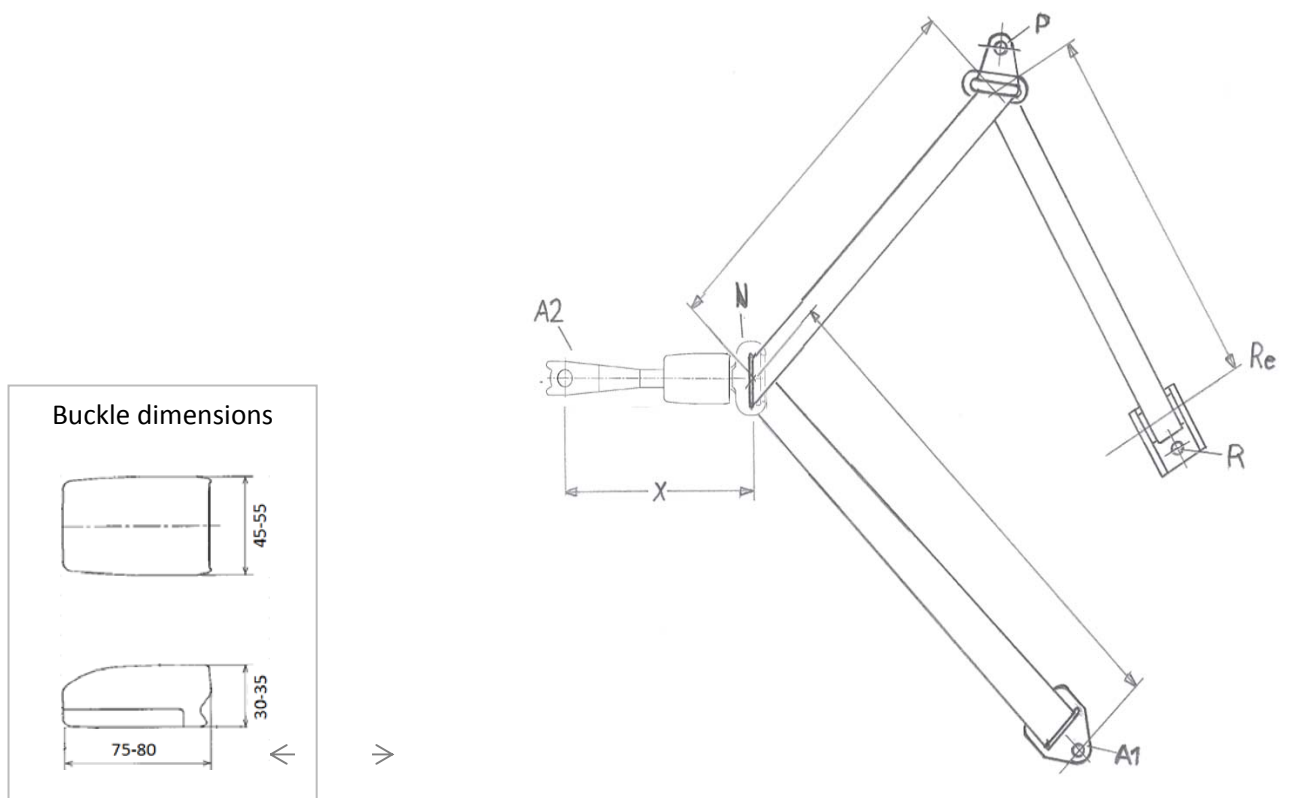


Figure 1B
Standard seat belt configuration, for fitting session of par.6.2.12.dynamic test



II. Justification

1. Requirements for car manufacturers (Regulation No. 16, Annex 17, Appendix 1, which allows a certain zone) are incompatible with requirements for Child Restraint System (CRS) manufacturers (Regulation No. 44, paragraph 6.2.12., asks for a different zone). Furthermore, the definition of main load-bearing contact point needs a more precise definition to prevent difficulties with various new concepts.
 2. The type approval administration of the Netherlands is confronted with CRS in which the child will show, first, an excessive forward movement of the pelvis before the tensioning process of the pelvis actually starts; this works in opposite of the aim of car manufacturers' approach to pre-tensioners.
 3. The type approval administration of the Netherlands is confronted with a CRS that forces the lie of the adult belt in real cars completely different from the lie on the test-trolley. Regulation No. 44 mentions a judgment using buckles, but does not further specify anything to have a proper judgement. To prevent incompatibilities in real cars, this paragraph aims to introduce a better check.
 4. Injury to a child as a result of a high local pressure must be avoided. Such injuries can not only be caused by twisted buckles but also by twisted tongues, therefore, the relevant paragraph is improved on this point.
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